

WHAT IS CLAIMED IS:

1. A golf ball comprising:
a dual core assembly including (i) a center core component and (ii) a core layer disposed about said center core component, said center core component having at least one density adjusting filler material dispersed
5 throughout a polymeric material; and
a multi-layer cover assembly including (i) an inner cover layer disposed on said dual core assembly and (ii) an outer cover layer disposed on said inner cover layer, at least one of said inner cover layer and said outer cover layer comprising a polyurethane material, and said inner cover layer and said
10 outer cover layer exhibiting a hardness differential of at least 5, as measured on the Shore D scale.
2. The golf ball of claim 1 wherein said density adjusting filler material is a density increasing material and has a specific gravity in the range of from about 1.0 to about 20.0.
3. The golf ball of claim 1 wherein said polymeric material of said center core is a thermoset material.
4. The golf ball of claim 1 wherein said polymeric material of said center core is a thermoplastic material.
5. The golf ball of claim 1 wherein said density adjusting material is selected from the group consisting of titanium, tungsten, nickel, molybdenum, iron, steel, lead, copper, brass, bronze, cobalt, zinc, tin, and combinations thereof.
6. The golf ball of claim 1 wherein said inner cover layer comprises an ionomeric material.

7. The golf ball of claim 1 wherein said inner cover layer has a thickness of from about 0.01 inches to about 0.10 inches.

8. The golf ball of claim 1 wherein said inner cover layer exhibits a Shore D hardness of at least 60.

9. The golf ball of claim 1 wherein said outer cover layer has a thickness of from about 0.01 inches to about 0.10 inches.

10. The golf ball of claim 1 wherein said outer cover layer exhibits a Shore D hardness of 55 or less.

11. The golf ball of claim 1 wherein said outer cover layer exhibits a Shore D hardness of 50 or less.

12. The golf ball of claim 1 wherein said hardness differential is at least 10, as measured on the Shore D scale.

13. The golf ball of claim 1 wherein said hardness differential is at least 15, as measured on the Shore D scale.

14. The golf ball of claim 1 wherein said hardness differential is at least 20, as measured on the Shore D scale.

15. The golf ball of claim 1 wherein said inner cover layer is harder than said outer cover layer.

16. The golf ball of claim 1 wherein said inner cover layer is softer than said outer cover layer.

17. The golf ball of claim 1 further comprising an outer core layer disposed between said core layer and said inner cover layer.

18. The golf ball of claim 1 wherein said outer cover layer comprises a polyurethane material.

19. A golf ball comprising:

a center core component including a polymeric material and at least one density-increasing filler material having a specific gravity in the range of from about 1.0 to about 20.0;

5 a core layer disposed about said center core component, said core layer having a composition different than said center core component;

an inner cover layer disposed on said core layer, said inner cover layer having a thickness of from about 0.01 inches to about 0.10 inches;

10 an outer cover layer disposed on said inner cover layer, said outer cover layer having a thickness of from about 0.01 inches to about 0.10 inches, said outer cover layer comprising a polyurethane material;

wherein the hardness differential between said inner cover layer and said outer cover layer is at least 5 on the Shore D scale.

20. The golf ball of claim 19 wherein said hardness differential is at least 10.

21. The golf ball of claim 19 wherein said hardness differential is at least 15.

22. The golf ball of claim 19 wherein said hardness differential is at least 20.

23. The golf ball of claim 19 wherein said density-increasing filler material is selected from the group consisting of titanium, tungsten, nickel, molybdenum, iron, steel, lead, copper, brass, bronze, cobalt, zinc, tin, and combinations thereof.

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24. The golf ball of claim 23 wherein said density-increasing filler material is titanium.

25. The golf ball of claim 23 wherein said density-increasing filler material is tungsten.

26. A method of forming a golf ball, said method comprising the steps of:

providing a density adjusting filler material;

providing a polymeric core material suitable for use in a golf ball
5 core;

mixing said density adjusting filler material and said polymeric core material and forming a center core component;

providing a core layer material having a composition different than the composition of said center core component;

10 forming a core layer from said core layer material about said center core component;

providing an inner cover material;

forming an inner cover layer from said inner cover material on said core layer;

15 selecting a polyurethane material adapted for use in an outer cover layer such that upon curing said inner cover layer and said outer cover layer, the hardness differential between said inner cover layer and said outer cover layer is at least 5; and

forming an outer cover layer on said inner cover layer to thereby
20 form said golf ball.

27. The method of claim 26 wherein said step of forming said outer cover layer utilizes reaction injection molding of said polyurethane material.

28. The method of claim 26 wherein said method further comprises:
providing an isocyanate component;

providing a component adapted for reacting with said isocyanate component selected from the group consisting of a polyether component, a polyester component, a polyol component, a polyamine component, and combinations thereof.

reacting said isocyanate component and said component adapted for reacting with said isocyanate component to thereby form said polyurethane material.

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